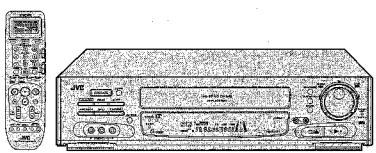
JVC

VIDEO CASSETTE RECORDER

HR-J615EA



G-CODE

VHS PAL

SPECIFICATIONS

GENERAL

Power requirement		: AC 220 – 240 V~, 50/60 Hz
Power consumption		: 24 W
Temperature		
	Operating	: 5°C to 40°C
	Storage	: –20°C to 60°C
Dimensions (WxHxD)		: 400 x 94 x 348 mm
Weight		: 4.8 kg
Format		: VHS PAL standard
Maximum recording time	(SP)	: 240 min. with E-240 video cassette
	(LP)	: 480 min. with E-240 video cassette

VIDEO/AUDIO

Signal system	: PAL-type colour signal and CCIR monochrome signal, 625 lines/50 fields
Recording system	: Rotary two-head helical scan system with slant double-azimuth combination video heads
Signal-to-noise ratio	: 43 dB (Rohde & Schwarz noise meter)
Horizontal resolution	: 250 lines
Frequency range	: 70 Hz to 10,000 Hz
Input/Output	: RCA connectors (VIDEO IN x 2, AUDIO IN x 2 VIDEO OUT x 1, AUDIO OUT x 1)

TUNER/TIMER

TV channel storage capacity		: 80 positions (+AUX position "AU")
Channel coverage		:
VHF	44 – 108 MHz	CH 0 – 5
	137 – 230 MHz	CH 5A – 12
UHF	470 – 862 MHz	CH 28 – 69
Aerial output		: UHF channel 36 (Adjustable 33 – 41)
Memory backup time		: Approx. 3 min.

ACCESSORIES

Provided accessories	: Aerial cable, Infrared remote control unit, "R6" battery x 2, Video cable, Audio cable, AC power cord

Specifications shown are for SP mode unless otherwise specified.
Design and specifications subject to change without notice.

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INSTRUCTIONS

Safety Precautions

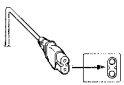
The rating plate and the safety caution are on the rear of the unit.

WARNING: DANGEROUS VOLTAGE INSIDE
WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

The OPERATE button does not completely shut off mains power from the unit, but switches operating current on and off.

This unit is produced to comply with Directives 76/889/EEC, 82/499/EEC, 87/308/EEC and Standard IEC Publ. 65.

CAUTION



- To avoid electric shock or damage to the unit, first firmly insert the small end of the AC power cord into the recorder until it is no longer wobbly, and then plug the larger end of the AC power cord into an AC outlet.
- When you are not using the recorder for a long period of time, it is recommended that you disconnect the power cord from the AC outlet.
- Dangerous voltage inside. Refer internal servicing to qualified service personnel. To prevent electric shock or fire hazard, remove the power cord from the AC outlet prior to connecting or disconnecting any signal lead or aerial.

IMPORTANT:
- It may be unlawful to record or play back copyrighted material without the consent of the copyright owner.
- Please read the "Precautions" section of this instruction manual before installing or operating the recorder.

Video tapes recorded with this video recorder in the LP (Long Play) mode cannot be played back on a single-speed video recorder.

VHS HQ G-CODE

- Only cassettes marked "VHS" can be used with this video recorder.
- HQ VHS is compatible with existing VHS equipment.
- G-Code is a trademark applied for by Gemstar Development Corp. G-Code system is manufactured under license from Gemstar Development Corporation.

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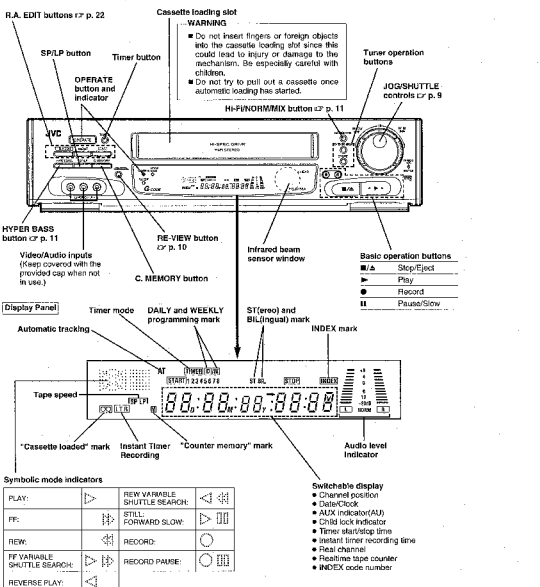
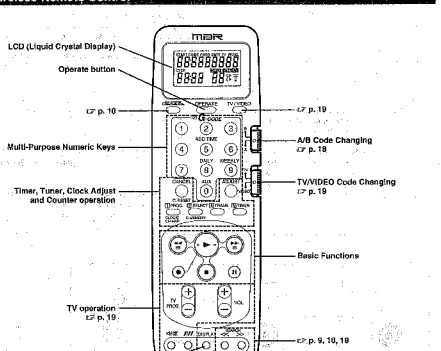
Controls And Indicators

Front Panel



Controls And Indicators (cont'd)

Wireless Remote Control



Installing Batteries

1. Open the battery compartment cover.
2. Insert 2 "R6"-size batteries (provided) in the correct directions.
3. Replace the cover.

How To Use

The remote control can operate most of your video recorder's functions, as well as basic functions of TV sets of JVC and other brands. ☞ p. 19.

- Point the remote control toward the sensor window.
- The maximum operating distance of the remote control is about 8 m.

Connections

It's essential that your video recorder be properly connected. Follow these steps carefully. THESE STEPS MUST BE COMPLETED BEFORE ANY VIDEO OPERATION CAN BE PERFORMED.

A RECORDER-TO-TV CONNECTION

RF CONNECTION

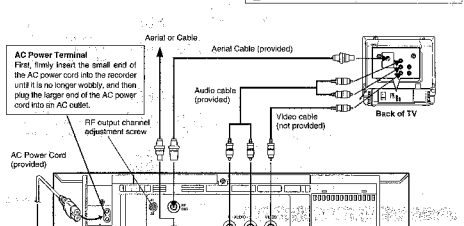
For TV sets without AV input terminals:

1. Connect the TV aerial cable to the recorder.
2. Connect the recorder to the TV's aerial terminal.

AV CONNECTION

For TV sets with AV input terminals:

1. Connect the aerial, recorder and TV as per "RF CONNECTION".
2. Connect the recorder to the TV's AV-IN terminals.


Aerial or Cable
Aerial Cable (provided)
AC Power Terminal
First, firmly insert the small end of the AC power cord into the recorder until it is no longer wobbly, and then plug the larger end of the AC power cord into an AC outlet.
Audio cable (provided)
Video cable (not provided)
Back of TV
RF output channel adjustment screw
AC Power Cord (provided)
AC outlet
TEST switch
Back of Recorder

B TUNE THE TV TO YOUR VIDEO RECORDER

The video recorder sends picture and sound signals via the RF connecting cable to your TV on UHF channel 36.

TEST SIGNAL

1. Turn on the recorder.
2. Set the TEST switch to ON.
3. Set your TV to the video channel. Tune the TV to bring the two vertical white bars on the screen most clearly. (UHF/CH 36)
   - Your TV should be set to the channel designated for use with a video recorder or to a spare channel if there is not a specified video channel on your TV.
4. Reset the TEST switch to OFF.

NOTES:

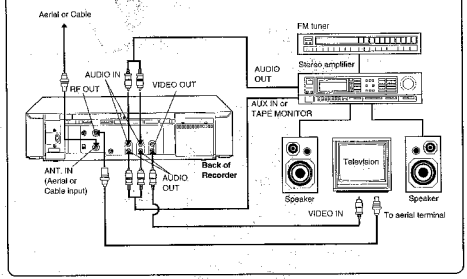
- If CH36 is occupied by a local station, adjust the RF output channel adjustment screw to use another channel between CH33 and CH41 instead.
- If some interference noise is continually seen on the screen, consult your JVC dealer.

IMPORTANT:

To operate the recorder with your TV using the RF connection, it is always necessary to set your TV's channel to the VIDEO channel. With an AV connection, set the TV to the VIDEO (or AV) mode.

Connections (cont'd)

CONNECTING TO HI-FI STEREO SYSTEM



If you have a HI-FI stereo system, you can connect your video recorder to it so that the sound can be heard through your HI-FI system. Please make these additional connections:

HI-FI AUDIO CONNECTION

- Connect the AUDIO IN L and R connectors of the recorder to the recording output terminals of the amplifier.
- Connect the AUDIO OUT L and R connectors of the recorder to the AUX IN or TAPE MONITOR terminals of the amplifier.

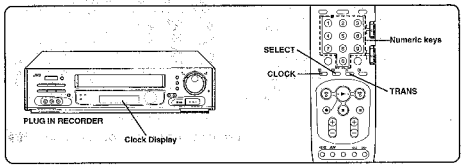
NOTES:

- Make sure L and R are correct when connecting the audio input and output connectors of the recorder to a stereo amplifier.
- If stereo or bilingual TV broadcasts are receivable in your area, this recorder can record them independently of the TV set and play them back through the connected audio system.
- When listening to sound from the connected stereo system, turn down the sound volume of the TV completely.

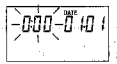
CAUTION:

- This recorder has a dynamic range of more than 90 dB with regards to its hi-fi audio capability. It is recommended that you check the maximum level if you are going to listen to the hi-fi audio signals through a stereo amplifier. A sudden surge in speaker input may cause speaker damage.
- Some speakers and televisions are specially shielded to prevent television interference. If both are of the non-shielded type, do not place the speakers adjacent to the TV set, otherwise the video playback picture may be adversely affected.

Setting The Clock



1. Load batteries (☞ p. 4).



2. Press CLOCK.

3. Press the appropriate numeric keys to input the time.

- Example: For 21:05, press 2 1 0 5.

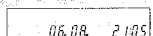
4. Press the appropriate numeric keys to input the day, month and year.

- Example: For 6th August, 1994, press 0 6 0 8 1 9 9 4.

Transfer-ready mark

5. Press TRANS with the remote control directed to the recorder's remote sensor window.

- The remote control's clock will start. At the same time, the set data will be transferred to the recorder.



TO MAKE CORRECTIONS

Press SELECT button so that the item you want to change blinks. Re-input that item. Continue to step 5.

AFTER A POWER CUT

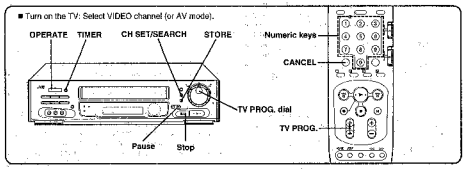
Since your video recorder has a 3-minute backup memory, it will not be affected by short power cuts. If mains power is unavailable for over 3 minutes, however, the recorder's display will reset to 0:00. In such a case, simply transfer the remote control's time to the recorder.

1. Press CLOCK three times.
2. Press TRANS with the remote control directed to the recorder's remote sensor window.

NOTES:

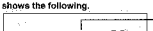
- If the day and month data is invalid (such as 31st April), the month digits are cleared automatically and the day digits will blink. Input again.
- If the year digits are automatically cleared in step 4, it is possible that you have input 29th February for a non-leap year. Input again.
- When the batteries are exhausted, the time display will change to "0:00" and start blinking. Replace all the batteries and set the clock again.

Setting The Tuner



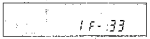
The procedure introduced here lets you assign receivable channels in your area to channel positions on your video recorder's tuner. Once stored, these can be accessed with the TV PROG. buttons or the TV PROG. dial.

1. **Press OPERATE to turn on the recorder.**
2. **Press CH SET/SEARCH until the display panel shows the following.**



Ch = Regular CC = Cable

3. **Press CH SET/SEARCH again briefly to start automatic scanning for receivable channels.**
   - Automatic scanning stops when a station is detected, and the channel position will blink.
   - Holding down CH SET/SEARCH will start reverse search.
   - If you don't want to store the station detected, simply press CH SET/SEARCH to continue automatic scanning.
4. **Press Pause to fine-tune the channel, if necessary.**
   - When the picture is clear, proceed to step 7.
5. **Turn TV PROG. dial so that the picture becomes clear.**

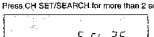


6. **Press Pause.**
7. **Turn the TV PROG. dial to select the channel position where you wish to store that TV station.**

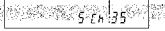
8. **Press STORE to store the station.**
   - The colon will disappear when the station is stored.
9. **Repeat steps 3 through 8 for other receivable channels.**
10. **Press Stop on the recorder to disengage the Channel Set mode.**

TO DELETE STORED CHANNELS

1. Turn TV PROG. dial to select the channel position you want to skip.
2. Press CH SET/SEARCH for more than 2 seconds.



3. Press CANCEL.

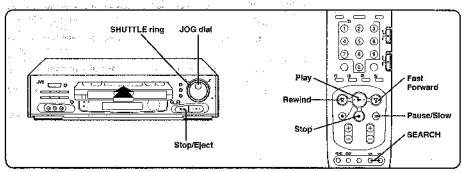


   - The colon will appear when the station is deleted. Channel position 5 can no longer be chosen by TV PROG. dial.
4. Press Stop on the recorder to disengage the Channel Set mode.

TO STORE NEW CHANNELS

1. Press CH SET/SEARCH for more than 2 seconds.
2. Press TIMER.
   - Real channel starts blinking.
3. Press numeric keys to input the number of the real channel you want to store.
4. Press numeric keys to input the number of a vacant channel position.
5. Press STORE to store the channel.
6. Press Stop on the recorder to disengage the Channel Set mode.

Playback



Basic Operations

Preparation
- Turn on the TV.
- Select VIDEO channel (or AV mode).

1. **Load a cassette.**
   - The recorder power will come on automatically.
   - The counter will be reset to "0:00:00" automatically.
   - If the safety tab on the cassette is removed, playback will start automatically.
2. **Press Play to start playback.**
3. **Press Stop to stop playback.**
   - To rewind the tape, press Rewind or turn the SHUTTLE to the left and release it.
   - To fast-forward the tape, press Fast Forward or turn the SHUTTLE to the right and release it.
   - To stop rewind or fast-forward, press Stop.
4. **Press Stop/Eject on the recorder to eject the tape.**

Variable-Speed/High-Speed Search, Still Playback/Frame Advance/Forward Slow Motion

During Playback or Still:
- Press either SEARCH button for variable-speed search.
- The more times the button is pressed, the faster the playback picture will move.
- To decrease speed, press the button for the opposite direction.

During Playback:
- Press Fast Forward for high-speed forward search, or Rewind for high-speed reverse search.
- For short searches, keep Fast Forward or Rewind pressed for more than 2 seconds. When released, normal playback will continue.
- Press Pause/Slow to view a still picture.
- Press again to advance the picture frame by frame.
- Press Pause/Slow for 2 seconds for slow motion.

Other Functions

JOG/SHUTTLE Control

You can view pictures in slow to fast motion, or frame-by-frame.

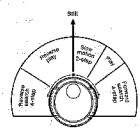
During Playback or Still:

1. Turn the outer ring (SHUTTLE) in either direction. The farther the ring is rotated, the faster the search speed. Releasing the ring stops the picture in the Still mode.
   - For fast-forward with a visible picture, turn the SHUTTLE all the way to the right and release it within 1 second.
   - For rewind with a visible picture, turn the SHUTTLE all the way to the left and release it within 1 second.
   - Slow motion is not possible in the reverse direction.

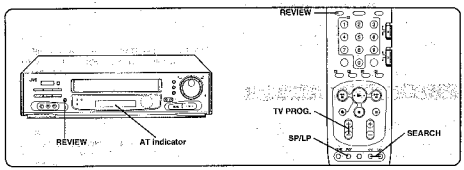
During Playback or Still:

1. Turn the inner dial (JOG) clockwise for jog control. The tape moves forward frame-by-frame at the speed with which the dial is turned.
   - Frame-by-frame playback is not possible in the reverse direction.
   - By rotating the JOG dial counterclockwise at 2 revolutions per second or faster, reverse play is possible.

To resume normal playback, press Play button.



Playback (cont'd)



Other Functions (cont'd)

Manual Tracking

Your video recorder is equipped with automatic tracking control. If there is picture distortion or "breaks" in the sound of Hi-Fi VHS tapes caused by mistracking, you can finely adjust tracking manually.

During Playback:

1. Press ▮▮/▮▮ (SP/LP) for manual override.
   - The AT indicator will go out.
2. Press TV PROG. + or – to adjust tracking.
   - Press ▮▮/▮▮ (SP/LP) to return to automatic tracking.

During Slow:

1. Simply press TV PROG. + or – to adjust tracking.

ReView Function

Simply by pressing a single button, the recorder power comes on, rewinds, and begins playback of the last recording. This makes it easier to "review" the programme you have timer-recorded.

When the recorder power is off:

Press REVIEW.

- After the recorder power comes on, the tape will be rewound to the beginning of the last recording (where the index code is placed) and playback will start automatically.
- To play back a recording located 2 index codes away, press REVIEW twice. You can access any one of up to 9 index codes.
- ReView is not possible while the recorder is in the Timer mode.
- The recorder's REVIEW button lights when timer recording is finished, and blinks while the tape is being rewound.

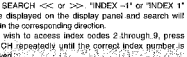
Index Search

Your recorder automatically marks index codes at the beginning of each recording. This function gives you quick access to any one of 9 index codes in either direction.

During Stop:

1. Press SEARCH << or >>. "INDEX –1" or "INDEX 1" will be displayed on the display panel and search will begin in the corresponding direction.
2. If you wish to access index codes 2 through 9, press SEARCH repeatedly until the correct index number is displayed.

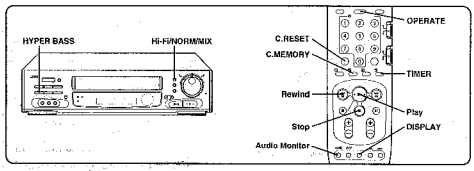
Ex.: To locate the beginning of B from the current position, press SEARCH << twice.
To locate the beginning of D from the current position, press SEARCH >> once.



- When the specified index code is found, playback will start automatically.

NOTES:

- The recorder automatically stops when still continues for more than 5 minutes.
- If the still picture is unstable, use the TV PROG. buttons to correct the picture.
- During search playback, some noise bars will appear.
- There is no audio during search, slow, still, or frame-by-frame playback.
- When playing back LP recordings in the search, still, or frame by frame playback mode, the picture will be distorted, and there may be a loss of colour.
- When a new tape is inserted, the recorder enters the automatic tracking mode automatically.



Repeat Playback

During Playback:

1. Press Play for more than 5 seconds, and release.
   - The Play indicator (▷) on the display panel will blink slowly.
   - The tape will be played all the way to the end 20 times automatically, and then stop.
2. To stop playback at any time, press Stop.

Counter Memory

During Playback:

1. Press DISPLAY until a counter reading appears on the display panel.
2. Press C.RESET at a point you wish to locate later.
   - The counter will read "0:00:00".
3. Press C.MEMORY.
   - The M indicator will light on the display panel.
4. When you wish to return to that point, press Stop and then Rewind.
   - The tape will rewind and stop at about "0:00:00" automatically.
5. To cancel the Counter Memory mode, press C.MEMORY again.

Next Function Memory

Your recorder can memorise what to do after rewind.

During Stop:

For automatic start of playback after the tape is rewound:

1. Press Rewind.
2. Press Play within 2 seconds.

For automatic power off after the tape is rewound:

1. Press Rewind.
2. Press OPERATE within 2 seconds.

For automatic timer standby after the tape is rewound:

1. Press Rewind.
2. Press TIMER within 2 seconds.

Soundtrack Selection

During Playback:

Your video recorder is capable of recording three soundtracks (HIFI L, HIFI R and NORM) simultaneously, and playing back the selected soundtrack.

- Pressing Audio Monitor on the remote control changes the track.

Track: (on display panel)	Use:
L + R	for Hi-Fi stereo tapes.
L	for main audio of bilingual tapes.
R	for sub audio of bilingual tapes.

- Pressing HI-FI/NORM/MIX on the recorder changes the mode.

Mode:	Track: (on display panel)	Use:
HIFI	L and/or R	for Hi-Fi stereo tapes.
NORM	NORM	for audio-dubbed tapes.
MIX	NORM + L and/or R	for audio-dubbed tapes.

NOTE:

- Normally use the L + R position. Then Hi-Fi stereo tapes are played back in stereo, and tapes with normal audio only are played back automatically in the NORM mode.

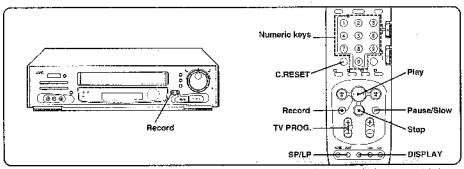
Hyper Bass

You can boost the bass sounds of music videos to make them sound more exciting.

During Playback :

1. Press HYPER BASS.
   - The HYPER BASS indicator will light, and bass sounds will be boosted.
2. Press HYPER BASS again to cancel the Hyper Bass mode.

Recording



Basic Operations

Preparation

- Turn on the TV.
- Select VIDEO channel (or AV mode).

1. **Load a cassette.**
   - The recorder power will come on automatically.
2. **Press TV PROG. or the numeric keys to select the channel you wish to record.**
   - You can also use the recorder's JOG dial to select the channel.
3. **Press SP/LP to select the tape speed.**
4. **Press Record and Play simultaneously.**
5. **Press Pause/Slow to pause recording.**
6. **Press Play to resume recording.**
7. **Press Stop to stop recording.**

NOTES:

- To start recording with the recorder's Record button, press it once on its own.
- After pause, when recording is resumed, a few frames recorded before the pause may be overlapped by the new recording. This is meant to reduce picture distortion and is not a malfunction.
- The recorder automatically stops when record-pause continues for more than 5 minutes.
- If the Record button does not work, check to see if the cassette's safety tab has been removed.
- The channel cannot be changed while recording is in progress. To change the channel, engage the record-pause mode, then change the channel.
- The recorder automatically rewinds when the end of the tape is reached during recording.

Other Functions

To Watch Another Programme While Recording

During Record:

1. Use the channel controls on the TV to select the other channel you wish to view.
   - The programme selected with the TV channel controls will appear on the TV screen while the one selected with the video recorder's channel controls will be recorded on the tape.

Instant Timer Recording (Off Timer)

You can start a recording and then set the recorder to shut off automatically after a set duration.

During Record:

1. Press recorder's Record. "ITR" and "0:30" indications appear, advising that power will switch off after 30 minutes.
2. Press Record again to delay the off-time by 30-minute increments (up to 4 hours).
   - For more precise setting, use the remote control's SELECT and TV PROG. buttons to set the exact time required (possible up to 8 hours and 59 minutes).

Elapsed Recording Time Indication

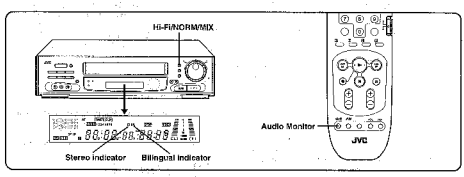
When you need to know the exact time of a recording.

1. Press DISPLAY until a counter reading appears on the display panel.
2. Press C.RESET before starting recording or playback.
   - The counter will be reset to "0:00:00" and show the exact elapsed time as the tape runs.

Display Button

When you wish to check the time, date, or counter reading.

1. Press DISPLAY to display the current clock time.
2. Press DISPLAY again to display the current date.
3. Press DISPLAY again to display the counter reading.



Stereo And Bilingual

Your recorder is equipped with a Sound-Multiplex decoder for reception of stereo and bilingual broadcasts.

- When a stereo programme is being received, the ST indicator lights on the display panel.
- When a bilingual programme is being received, the BIL indicator lights on the display panel.

To Record Stereo Programmes

Stereo programmes are automatically recorded in stereo on the Hi-Fi audio track (with the normal audio track recording mixed L and R channel sound). No special operation is required. Simply follow the basic recording procedure.

- To listen to the stereo soundtrack while recording, select "L+R" with Audio Monitor. (☞p.11

NOTE:

- If the quality of stereo sound being received is poor, the ST indicator will go off, and the broadcast will be received in monaural with better quality.

To Record Bilingual Programmes

Bilingual programmes are automatically recorded in bilingual on the Hi-Fi audio track. The main soundtrack will be recorded on the normal audio track.

- To listen to the Hi-Fi soundtrack during recording, select "L" for Main, and "R" for Sub.
- To listen to the normal soundtrack, select "NORM" with the Hi-Fi/NORM/MIX button on the recorder.

Usable Cassettes And Their Recording Times

This video recorder can record on regular VHS and Super VHS cassettes. However, it will record and play back regular VHS video signals only. It is not possible to play back a recorded Super VHS tape.

Type of Cassette	Recording/Playback Time (minutes)	
	SP Speed	LP Speed
E-240	240	480
E-180	180	360
E-120	120	240
E-90	90	180
E-60	60	120
E-30	30	60

Accidental Erasure Prevention

To prevent accidental recording on a recorded cassette, remove its safety tab. To record on it later, cover the hole with adhesive tape.

Preparation For G-Code Timer Programming

What is G-Code?
For timer-recording to take place, information such as the channel, date, start time and stop time of the programme you wish to record, must be programmed into the recorder's timer memory. The G-Code system condenses all this information into a simple G-Code number.
Since the G-Code number contains information on the channel number, if you live in an area that uses channel numbers that are different from those listed in your TV directory, these "differences" must be input into the remote control. This process is called "Channel Mapping" (CH MAP).

GUIDE PROG. number assignments

AUSTRALIA	
Station Name	GUIDE PROG. number
ABC	2
SEVEN Network	7
NINE Network	9
TEN Network	10
SBS	1

NEW ZEALAND	
Station Name	GUIDE PROG. number
TV ONE	1
CHANNEL 2	2
TV3	3
SKY TV MOVIE	4
SKY TV SPORTS	5
SKY TV NEWS	6
CTV	7
ACTION TV	8

CHECK THE GUIDE PROG. NUMBERS

Preparation
- Make sure you have set the clock. (☞ p. 7)
- Make sure you have set the tuner. (☞ p. 8)
- Get a TV schedule listing (magazine, newspaper, etc.) which carries G-Code numbers.

A Find out the channel position numbers your recorder tunes to when you use the TV PROG. –/+ buttons (the positions you stored on page 8) and write them into the list below.

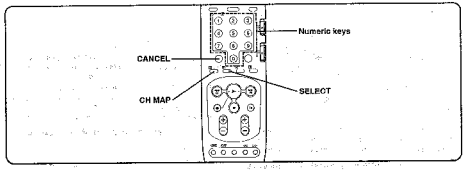
Example: 1, 2, 3, 4, 5, 8, 10, 12

B Look through the TV listing and find out the broadcast station name of each of the channels.

C Find out the GUIDE PROG. numbers of each of the stations referring to "GUIDE PROG. number assignments" on the left and write them into the list below.

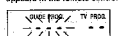
A Channel on your recorder (TV PROG. number)	B Station name	C GUIDE PROG. number
(ex.) 1	SBS	1
2	ABC	2
3	SEVEN Net.	7

D In cases where the channel number your recorder receives (A) and the GUIDE PROG. number (C) for that station do not match, it is necessary to make changes in the remote control's Channel Map. (continued on next page)



INPUT GUIDE PROG. NUMBERS INTO REMOTE

1. **Press CH MAP until the Channel Map display (below) appears in the remote control's LCD.**



2. **Press the appropriate numeric keys to enter the GUIDE PROG. number (C column in your list).**
Ex.: For "7", press 0, 0, 7.
For "10", press 0, 1, 0.

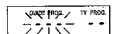
3. **Press the appropriate numeric keys to enter the channel number your recorder receives that station on. (TV PROG. number, A column in your list.)**
Ex.: For "3", press 0, 3.

4. **Press SELECT.**
- To input other channels into the Channel Map, repeat steps 2 – 4 above.

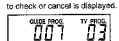
5. **Press CH MAP and display the clock time.**

TO CHECK/CANCEL GUIDE PROG. NUMBERS IN THE REMOTE

1. Press CH MAP until the Channel Map display (below) appears in the remote control's LCD.



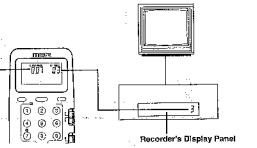
2. Press SELECT until the GUIDE PROG. number you wish to check or cancel is displayed.



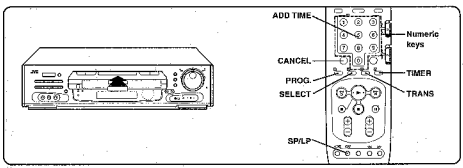
To Cancel:
3. Press CANCEL.
4. Press CH MAP and display the clock time.

NOTES:
- When you move to another area, be sure to make changes in the Channel Map as necessary.
- When the remote control's batteries are replaced, the time or Guide Channel numbers you have set may be erased. If this happens, reset them again.

Ex.: From column C in the list: The GUIDE PROG. number for SEVEN Network is "7".
From column A in the list: The TV PROG. number for SEVEN Network is "3".



Timer-Recording — G-Code Timer Programming —



The built-in G-Code programming system greatly simplifies timer programming because you won't have to enter all the data that is usually necessary (such as date, start and stop time, and channel).

TIMER PROGRAMMING IS NOT POSSIBLE UNLESS THE CLOCK HAS BEEN SET.

Preparation

- Make sure you have set the GUIDE PROG. numbers (☞ p. 14 – 15).
- Insert a cassette with the safety tab in place. The recorder power will come on automatically.

1. **Press PROG.**

2. **Press the appropriate numeric keys to enter the G-Code number for the TV programme you wish to record.**
   - For G-Code numbers, refer to your newspaper or TV directory.

3. **Press SELECT.**
   - The LCD will show the data for the G-Code number you just entered.
   - If the entered G-Code number is not proper, "Err" appears on the LCD. Check the G-Code number again and re-enter it.

WEEKLY program: After step 3, press numeric key "9".
DAILY (Mon. – Fri.) program: After step 3, press numeric key "8".

4. **Press SP/LP to select the tape speed.**
5. **Press TRANS with the remote control directed toward the recorder's Remote Sensor window.**
6. **Press PROG.**
   - The LCD returns to the clock display and the entered data will be automatically cleared.
   - If you need to set another program, repeat steps 1 – 6.
7. **Press TIMER.**
   - The recorder will enter the Timer mode and power will go off.

TO DELAY THE STOP TIME

After you press SELECT in step 3, press the ADD TIME button. Each time the ADD TIME button is pressed, the Stop time is delayed by 5 minutes (5 minutes of recording time is added). You can easily compensate for anticipated programme schedule delays this way.

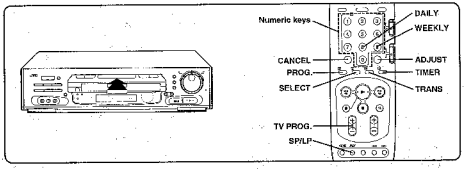
TO MAKE CORRECTIONS

- In step 2, press CANCEL to backspace and re-enter the correct G-Code number.
- After checking the data in step 3, press PROG. twice and re-enter the correct G-Code number.
- After checking the data in step 3, if you want to delay the stop time, etc. press SELECT to make the item you want to change blink, and input new data.
- Pressing PROG. clears the programmed data.

To check, cancel and replace programs, ☞ p. 17.

To use the recorder after setting to the Timer mode, ☞ p. 17.

— LCD Timer Programming —



The LCD timer programming lets you input all necessary settings manually. It's helpful if the G-Code number for the TV programme you want isn't readily available.

Preparation

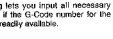
- Insert a cassette with the safety tab in place. The recorder power will come on automatically.

1. **Press PROG. twice.**
2. **Press numeric keys to input the date.**

   Ex.: For 26th May, press 2605.

3. **Press numeric keys to input the start time, stop time and channel.**

   Ex.: For 8:00, press 0800.



Transfer-ready mark

WEEKLY program: After you input the channel and the transfer-ready mark appears on the LCD, press numeric key "9".

DAILY (Mon. – Fri.) program: After you input the channel and the transfer-ready mark appears on the LCD, press numeric key "8".

4. **Press SP/LP to select the tape speed.**
5. **Press TRANS with the remote control directed to the recorder's Remote Sensor window.**
6. **Press PROG.**
   - The LCD returns to the clock display and the entered data will be automatically cleared.
7. **Press TIMER.**
   - The recorder will enter the Timer mode and power will go off.

TO MAKE CORRECTIONS

- During steps 2 and 3, press CANCEL to backspace and input new data.
- After setting the channel in step 3, press SELECT to make the item you want to change blink, and input new data.
- Pressing PROG. clears the programmed data.

TO CHECK, CANCEL AND REPLACE PROGRAMS

To check preset programs:

1. Press ADJUST until the program settings are displayed on the display panel.
   - Program 1 is displayed with the number blinking.
2. Press SELECT to review the program contents in succession.
3. To check another program, press ADJUST again.

To cancel the program:

4. Press CANCEL.
   - You can press CANCEL at any stage while the program is open.

To replace a program:

5. Use the SELECT and TV PROG. buttons to input new data.

TO USE THE RECORDER AFTER SETTING TO THE TIMER MODE

For safety, your recorder disables all other functions while in the Timer mode.

- Press TIMER to disengage the Timer mode.
- To re-engage the Timer mode, press TIMER.

Timer-Recording (cont'd)

Error Indications

The following error indications may appear on the recorder when you press the TIMER button to engage the Timer Standby mode. Here's why, and what you should do.

■ "TIMER" and "⏲" on the display panel continue blinking.
WHY: There is no cassette in the recorder.
WHAT TO DO: Insert a cassette.

■ The cassette is automatically ejected. "TIMER" and "⏲" continue blinking.
WHY: The inserted cassette has its safety tab removed.
WHAT TO DO: Insert a cassette with its safety tab intact. Or cover the safety tab hole of the cassette with adhesive tape and re-insert it. ↱ p. 13.

■ "TIMER" blinks for 10 seconds and the Timer Standby mode is cancelled.
WHY: There are no preset programs in memory, or they have all been incorrectly preset.
WHAT TO DO: Check the programmed data and re-program it as necessary. Press TIMER again.

Other Indications

■ "TIMER" steady lit (with clock display).
WHY: The recorder is in the Timer Standby mode. This is the normal display you should see when you press the TIMER button.

■ "⏲" and "TIMER" steady lit.
WHY: Normal display while timer-recording is in progress.

■ The cassette was ejected, with power off and "TIMER" and "⏲" are blinking.
WHY: This means that the end of the tape was reached while timer-recording was in progress. Therefore, the preset program may not be recorded in its entirety.

■ "0:00" blinking.
WHY: This means the clock must be set. It's displayed when time-keeping is terminated due to a power failure or because the recorder's power plug was pulled from the AC outlet.
WHAT TO DO: Set the clock. ↱ p. 7.

■ If power was interrupted, it's also likely that all preset-timer programming data has been erased. Please check and re-program as necessary.

■ "- - - - - - - -" is displayed for about 5 seconds when the TRANS button is pressed.
WHY: Data was not successfully transferred. The program may have been incorrectly preset, or the recorder's clock has not been set, or all the recorder's timer programs (1 – 8) are preset.
WHAT TO DO: Check the LCD program, and re-program as necessary. Transfer the correct data. Or cancel unnecessary programs, and transfer again.

Other Functions

Locking The Recorder's Controls

To avoid unwanted operation and prevent accidental recording...

1. Press the remote control's OPERATE button to turn the recorder's power off. Keep this button pressed for about 2 more seconds after the power LED indicator has gone off.
   ■ The Child Lock indicator (–) will appear on the display panel.
2. Child Lock is cancelled when you switch the recorder's power on with the remote's OPERATE button.
   ■ Pressing the TIMER button during timer-recording also cancels the Child Lock mode.

NOTES:
■ While Child Lock is engaged, make sure you keep your remote control in a safe place inaccessible to children.
■ Timer-recording is possible in the Child Lock mode. After timer-recording is done, Child Lock remains in effect.

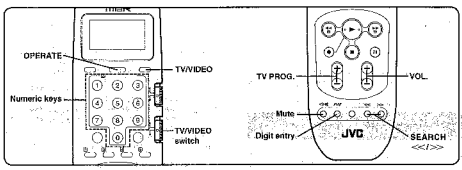
Remote A/B Code Switching

The remote control is capable of controlling two JVC video recorders independently, one set to respond to your remote control's A code control signals and another set to respond to B code control signals. The remote control is preset to send A code signals because your video recorder is initially set to respond to A code signals. You can easily modify your video recorder to respond to B code signals.

1. Unplug the recorder's power cord from the AC outlet.
2. Set the A/B code switch to B.
3. Plug the power cord back into the AC outlet. Do not use other remote controls at this stage.
4. Turn the recorder power on using the remote control's OPERATE button. The recorder will now only respond to B code signals.

NOTE:
Some TV sets may malfunction in response to the B mode. If this happens switch back to the A mode.

Using The Remote Control For TV Operation



TV Code Setting

Your remote control can operate the basic functions of your TV set. In addition to JVC televisions, other manufacturers' televisions listed on the right can also be controlled by setting the remote control to "TV". If your television is a JVC (Code-1), you don't have to set the TV code in step 2.

1. Set the TV/VIDEO switch to "TV".
2. While holding down the OPERATE button, press the numeric keys corresponding to the code number for your TV's brand.
   ■ Press OPERATE to turn the TV power on.
   ■ Press TV/VIDEO to switch the TV between TV and VIDEO (or AV) mode.
   ■ Press TV PROG. to select the TV's channel.
   ■ Press VOL. to adjust the TV's sound volume.
   ■ Press Mute to mute the TV's sound.
3. To operate your recorder, set the TV/VIDEO switch back to "VIDEO".

NOTES:
■ The TV PROG. button does not function with televisions using Code 2.
■ The TV/VIDEO button does not function with televisions using Code 3.
■ With some televisions, the OPERATE button functions only to turn the TV power off, and the TV/VIDEO button functions only to switch the TV to the VIDEO (AV) mode.
■ Whenever you replace batteries in the remote control, it is necessary to re-set the TV code if your television is not a JVC TV.

IMPORTANT
Although the provided remote control unit is compatible with JVC televisions, as well as many TV models manufactured by others, it is possible that the provided remote control will not work with your TV, or in some instances, will have limited function capability.

CODE	TV BRAND NAME
1	JVC
2	BRANDT, NORDMENDE, SABA, TELEAVIA, TELEFUNKEN, THOMSON
3	FERGUSON
4	PHILIPS
5	BLAUPUNKT, GRUNDIG
6	SONY
7	PANASONIC
0	GRAETZ, ITT, LUXOR, SALORA, SELECO

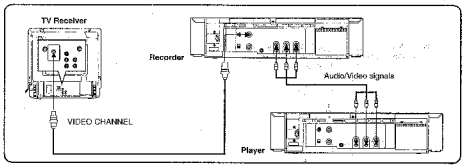
To Control Your Television With Additional Buttons

The numeric keys can also be used to select the TV's channel by setting the remote control to the TV mode.

1. Set the TV/VIDEO switch to "TV".
2. Use the numeric keys and the Digit entry button or the SEARCH ≪/≫ buttons to select the TV's channel.
   ■ With televisions using Code 1, 3, 4, 6 or 7 the Digit entry button corresponds to the 1-digit/2-digit entry switching button (often labelled -/--) of your TV's remote control.
   ■ With televisions using Code 1, 5 or 0, the SEARCH ≪ button corresponds to the 10 + button, and the SEARCH ≫ button, to the 20 + button of your TV's remote control.

NOTE:
■ The way these buttons are used is determined by your TV. Use these buttons as instructed for your TV's remote control.

Editing

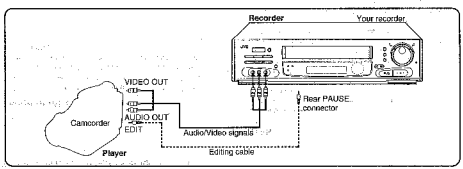


Editing To/From Another Recorder

Preparation

- Connect the player's AUDIO and VIDEO OUT connectors to the recorder's AUDIO and VIDEO IN connectors.
- Use the L connector for monaural connection.

	Player	Recorder
1	Load the source tape.	Load the recording tape.
2		Select the external input mode. **With this video recorder,** Press the numeric key "0". "-AU" will appear instead of a channel number.
3		Press and hold down the Pause button while you press the Record button to enter the Record-Pause mode.
4	Play back the source tape to search for a scene to be edited.	
5		Start recording where you want to start editing, with this recorder, by pressing the Play button.
6		To stop editing temporarily, press the Pause button.
	Repeat steps 4 through 6 to continue editing.	
7	To stop editing, press the Stop button.	



Editing From A Camcorder

Preparation

- Connect the camcorder's A/V output connectors to the recorder's front panel V (Video) and A (Audio) connectors.
- Use the L connector for monaural connection.

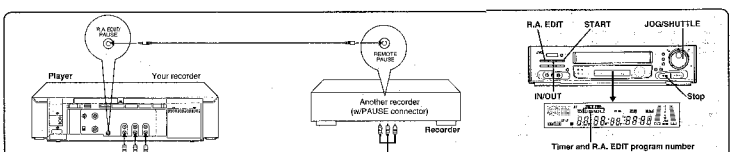
	Camcorder	Recorder
1	Load the source tape.	Load the recording tape.
2		Select the external input mode: ■ Press the numeric key "0". "F-AU" will appear instead of a channel number.
3		Press and hold down the Pause button while you press the Record button to enter the Record-Pause mode.
4	Play back the source tape to search for a scene to be edited.	
5		Press the Play button where you want to start editing.
6		To stop editing temporarily, press the Pause button.
	Repeat steps 4 through 6 to continue editing.	
7	To stop editing, press the Stop button.	

NOTES:

- If the camcorder is equipped with the Master Edit Control system, you can control the recorder using the camcorder's controls. See the camcorder's instruction manual for operating procedures.
- Connections made to the front panel Video and Audio input automatically override the rear panel AUDIO/VIDEO input connection.

To Watch A Compact VHS Tape

Compact VHS camcorder recordings (PAL) can be played on your video recorder. Place the recorded cassette into a C-P6 Cassette Adapter and it can be used like any full-sized VHS cassette.



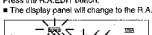
PREPARATION

This function makes it easier to create edited videos when your recorder is used as the source player in combination with another video deck which is equipped with a PAUSE (i.e. REMOTE/ PAUSE) terminal. You can pre-program up to 8 scenes or "cuts" for automatic editing in the sequence you have specified.

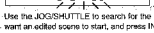
1. Connect your recorder's AUDIO and VIDEO OUT connectors to the recording deck's AUDIO and VIDEO IN connectors.
   - Use the L connector for monaural connection.
2. Connect your recorder's R.A.EDIT connector to the recording deck's PAUSE connector.
   - If the recording deck does not have a PAUSE connector, connect to the R.A.EDIT connector.
3. Turn both units on.
4. Engage the recorder's AUX (Baby) mode.

OPERATION

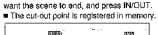
1. Insert a recorded cassette into your recorder, and insert a cassette (with safety tab intact) into the recording deck.
2. Play back the tape in your recorder.
3. Press the R.A.EDIT button.
   - The display panel will change to the R.A.EDIT mode.



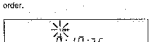
4. Use the JOG/SHUTTLE to search for the point where you want an edited scene to start, and press IN/OUT.
   - The cut-in point is registered in memory.



5. Use the JOG/SHUTTLE to search for the point where you want the scene to end, and press IN/OUT.
   - The cut-out point is registered in memory.



6. Specify additional scenes by repeating steps 4 – 5.
7. Put the recording deck in the Record-Pause mode.
8. Press START.
   - The function begins automatic editing; all the specified scenes are copied to the recording deck in sequential order.



   - While a scene is being searched, the recording deck automatically enters the Record-Pause mode.
   - When Random Assemble Editing is finished, your recorder enters the Still mode, the recording deck enters the Record-Pause mode, and the cursor blinks at the next available scene number.
9. Press R.A.EDIT again.
10. Press Stop on both decks to end Random Assemble Editing.

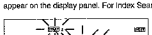
To check, cancel and replace programs, ☞ p. 24.

Sound Shuttle

You can also monitor the sound when searching for scenes you want to edit in steps 4 – 5.
Since you can hear the soundtrack during selection, you can avoid abrupt or unnatural sounding scene-to-scene connections.

Using Index Search With Random Assemble Editing

In step 4, Index Search can also be used to locate your edit points. When used, "INDEX" and the index number will appear on the display panel. For Index Search ☞ p. 10.



- Using Index Search during R.A.Edit will result in a reduction in accuracy.

Memory Capacity

Random Assemble Editing utilizes the same memory space as the recorder's timer; so the number of sequences available to this function may not be 8, depending on how many programs are already stored in memory.
Example: When three programs are stored in memory (timer program number 1, 3 and 4).

	Program number on display panel							
Timer program	1		3	4				
R.A.EDIT program		2			5	6	7	8

Only 5 programs can be programmed for R.A.EDIT. The program numbers 2, 5, 6, 7, 8 are available and R.A.EDIT will be performed in this order.

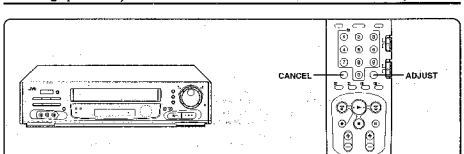
- If the display panel shows "- - - - - -" when you press R.A.EDIT, the memory is already full of timer programs. If this happens, cancel some of the timer programs. (☞ p.17.)

NOTES:

- When editing, there may be a discrepancy of about 2 seconds on the playback tape between the locations you chose as cut-in/out points and the locations the recorder recognizes as those points.
- For any scene, the cut-out point must have a counter reading that is at least 1 second after the cut-in point. A cut-out point with a counter reading less than or the same as the cut-in point will not be registered.
- Since the playback deck prerolls during Random Assemble Editing, there must be at least 15 seconds worth of recorded material prior to any cut-in point on the playback tape.
- If the search time for a cut-in point exceeds 5 minutes, the recording deck's Record-Pause mode will be cancelled and editing will not take place.

Editing (cont'd)

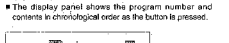
— Random Assemble Editing —



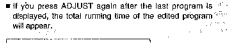
TO CHECK PROGRAMS

While in the R.A.EDIT mode:

1. Press ADJUST.
   - The display panel shows the program number and contents in chronological order as the button is pressed.



   - If you press ADJUST again after the last program is displayed, the total running time of the edited program will appear.



   - You can also check the current total running time during programming.

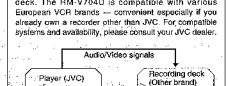
TO CANCEL AND REPLACE PROGRAMS

During steps 4 and 5 (☞ p. 22) or when checking programs:

1. Press CANCEL.
   - The displayed program will be cleared.
   - To cancel another program, press ADJUST until the program you want to cancel appears on the display panel, and then press CANCEL.
   - To replace a program, perform steps 4 and 5.

Optional RM-V704U Multi-Brand R.A.Edit Remote Control

By connecting this remote control to your recorder's R.A.EDIT Connector, Random Assemble Editing will become possible in conjunction with a second non-JVC deck. The RM-V704U is compatible with various European VCR brands — convenient especially if you already own a recorder other than JVC. For compatible systems and availability, please consult your JVC dealer.



NOTE:

- Although the RM-V704U is designed to operate the recording deck, it may not work with some VCRs, or may have limited function capability.

Precautions

Please follow these safety precautions. Not doing so may result in damage to the recorder, remote control, or video cassette.

- **Avoid extreme heat and direct sunlight.**
- **Avoid extreme cold.**
- **Avoid extreme humidity.**
- **Avoid dust.**
- **Avoid places subject to vibrations.**
- **Avoid strong magnetic fields.**
- **Do not block the recorder's ventilation openings.**
- **Do not place anything heavy on the recorder or remote control.**
- **Do not place anything which might spill on top of the recorder or remote control.**
- **Do not place the recorder on cushions, pillows, or thick carpeting.**
- **Use the recorder in a stable, horizontal position only.**

Beware of moisture condensation

Moisture in the air will condense on the recorder when you move it from a cold place to a warm place, or under extremely humid conditions — just as water droplets form on the surface of a glass filled with cold liquid. Moisture condensation on the head drum will pause damage to the tape. In conditions where condensation may occur, keep the recorder's power turned on for a few hours to let the moisture dry.

When transporting

- Be sure to remove cassette from recorder before packing.
- Avoid violent shocks to the recorder during packing and transport.

Place cassettes in cassette cases and store vertically.

Special Note On Video Cassettes

To prevent accidental recording on a recorded cassette, remove its safety tab. To record on it later, cover the hole with adhesive tape.

Specifications

GENERAL

Power requirement	:	AC 220 – 240 V, 50/60 Hz
Power consumption	:	24 W
Temperature		
Operating	:	5°C to 40°C
Storage	:	–20°C to 60°C
Dimensions (WxHxD)	:	400 x 94 x 348 mm
Weight	:	4.8 kg
Format	:	VHS PAL standard
Maximum recording time		
(SP)	:	240 min. with E-240 video cassette
(LP)	:	480 min. with E-240 video cassette

VIDEO/AUDIO

Signal system	:	PAL-type colour signal and CCIR monochrome signal, 625 lines/50 fields
Recording system	:	Rotary two-head helical scan system with slant double-azimuth combination video heads
Signal-to-noise ratio	:	43 dB (Rohde & Schwarz noise meter)
Horizontal resolution	:	250 lines
Frequency range	:	70 Hz to 10,000 Hz
Input/Output	:	RCA connectors (VIDEO IN x 2, AUDIO IN x 2 VIDEO OUT x 1, AUDIO OUT x 1)

TUNER/TIMER

TV channel storage capacity	:	80 positions (+AUX position "AU")
Channel coverage		
VHF 44 – 108 MHz	:	CH 0 – 5
137 – 230 MHz	:	CH 5A – 12
UHF 470 – 862 MHz	:	CH 28 – 69
Aerial output	:	UHF channel 36 (Adjustable 33 – 41)
Memory backup time	:	Approx. 3 min.

ACCESSORIES

Provided accessories	:	Aerial cable, Infrared remote control unit, "R6" battery x 2, Video cable, Audio cable, AC power cord

Specifications shown are for SP mode unless otherwise specified

Design and specifications subject to change without notice.

In Case Of Difficulty

POWER AND TAPE TRANSPORT PROBLEMS

Symptoms	Check points
No power is applied to the recorder.	■ Is the power cord disconnected? — Connect it.
Clock is functioning properly, but the recorder cannot be powered.	■ Is "TIMER" displayed on the display panel? — Press the TIMER button to extinguish the display.
Tape stops during rewind or fast-forward.	■ Is the C. MEMORY button pressed? — Press again to make "M" disappear from the display panel.

RECORDING PROBLEMS

Symptoms	Check points
Recording cannot be started.	■ Is a cassette loaded? ■ Is the safety tab on the cassette removed? — Reseal the slot with adhesive tape.
TV broadcasts cannot be recorded.	■ Has "external input" been selected? — Set to the desired channel.
Tape-to-tape editing or camera recording is not possible.	■ Is the camcorder or another video recorder correctly connected? ■ Are all necessary power switches turned ON? ■ Has "external input" been selected? — Set to the correct input mode. (☞ p. 20, 21)
Timer recording is not possible.	■ Have you set the clock correctly and programmed the timer correctly? — Check once again. ■ Is "TIMER" displayed on the display panel? — If not, press the TIMER button to display "TIMER".
G-Code timer recording is not possible, or cannot be done correctly.	■ Have you set GUIDE PROG. numbers into the remote control correctly? (☞ p. 14, 15) ■ Did you enter the correct G-Code number for that programme? (☞ p. 16)

PLAYBACK PROBLEMS

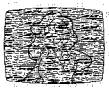
Symptoms	Check points
Playback picture does not appear while the tape is running.	■ If you are using RF OUT connection, is the TV receiver's channel selector set to the correct video channel? — Set it to the RF converter channel (UHF 36). (☞ p. 6) ■ If you are using AV connection, is the TV receiver set to the AV mode? — Set it to the AV mode.
Noise appears during visual search.	■ This is normal.
Noise appears during normal or slow-motion playback.	■ Is the automatic tracking mode engaged? — Try manual tracking. (☞ p. 10)
Playback picture is blurred or interrupted while TV broadcasts are clear.	■ Video heads may be dirty. — Head cleaning is necessary. Consult your JVC dealer. (☞ p. 27)
Breaks are noticeable in Hi-Fi audio reproduction.	■ Is the automatic tracking mode engaged? — Try manual tracking (☞ p. 10)

OTHERS

Symptoms	Check points
Whistling or howling is heard from TV during camera recording.	■ Move camcorder or camera's microphone away from TV or reduce TV sound volume.
Channel cannot be switched.	■ Is recording in progress? — Press the Pause/Slow button, change the channel, and press the Play button.
Remote control does not function.	■ Are the batteries discharged? — Replace with new ones. ■ Is the A/B code switch set to the appropriate position? ■ Is the TV/VIDEO code switch set to the appropriate position? — Check once again.

ATTENTION:
This recorder contains microcomputers. External electronic noise or interference could cause malfunctioning. In such cases, switch the power off and unplug the power cord. Then plug it in again and switch on. Take out the cassette. After checking the cassette, operate the unit as usual.

About head cleaning



■ If the picture playback becomes blurred, it does not mean that the recorded program has been erased.
■ Dirt accumulated on the video heads after long periods of use causes such troubles. In this case, head cleaning requiring highly technical care is necessary.
■ For head cleaning, consult the nearest JVC dealer.